

REMARKS

Claims 45-62 are pending in the present application and at issue. It is respectfully submitted that the present amendment presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the above amendments and the following remarks is requested.

I. The Rejection of Claims 45-62 under 35 U.S.C. 102

Claims 45-62 are rejected under 35 U.S.C. 102(e) as anticipated by Grichko (US 2004/0253696). Specifically, the Office states that Grichko discloses adding an alpha-amylase and a maltogenic alpha-amylase during liquefaction. This rejection is respectfully traversed.

Grichko discloses a process for producing a fermentation product in a fermentation medium which comprises a fatty acid oxidizing enzyme. Grichko further discloses that the fermentation process may be used in combination with liquefaction and/or saccharification with additional enzymes. In paragraph [0046], Grichko discloses:

In a preferred embodiment of the invention one or more additional enzyme activities may be used in combination with ... the fatty acid oxidizing enzyme treatment of the present invention. Preferred additional enzymes are esterases, such as lipases and/or cutinases, phytase, laccase, proteases, cellulose [sic, cellulase], xylases [sic, xylanases], amylases, such as alpha-amylases, maltogenic alpha-amylases, beta-amylases, or glucoamylases, or mixtures thereof.

Applicants submit that one of ordinary skill in the art would interpret this paragraph to mean that one may use one or more enzymes of different genera, but does not suggest to use two enzymes of the same genus. This paragraph identifies the following genera: esterase, phytase, laccase, protease, cellulase, xylanase, and amylase. For example, this paragraph would suggest to use an esterase (e.g., a lipase or a cutinase) and a phytase, but not a lipase and a cutinase because lipase and cutinase are species of the same genus (i.e., esterase). Furthermore, this paragraph would suggest to use a cellulase and an amylase (e.g., an alpha-amylase, maltogenic alpha-amylase, beta-amylase or glucoamylase), but not an alpha-amylase and a maltogenic alpha-amylase.

This is further supported by paragraphs [0085] – [0094] of Grichko. In paragraph [0086], Grichko discloses that “the fatty acid oxidizing enzyme treatment is used in combination with an amylase, and in paragraph [0093], Grichko discloses that “The amylase may also be a maltogenic alpha-amylase.”

Applicants respectfully request that if the Office maintains this rejection, that the Office identify the page and line numbers of Grichko which the Office alleges to disclose the use of both an alpha-amylase and a maltogenic alpha-amylase in liquefaction.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 102. Applicants respectfully request reconsideration and withdrawal of the rejection.

II. The Rejection of Claims 45-48, 51, and 54-59 under 35 U.S.C. 102

Claims 45-48, 51, and 54-59 are rejected under 35 U.S.C. 102(b) as anticipated by Veit et al. (WO 02/38787). Specifically, the Office states that Veit et al. disclose adding an alpha-amylase and a maltogenic alpha-amylase during liquefaction. This rejection is respectfully traversed.

Veit et al. disclose a process for producing ethanol comprising liquefaction of a starch-containing material in the presence of an alpha-amylase; jet cooking; and liquefaction. Veit et al. disclose at page 11, lines 19-21 that:

The invention relates to a method of producing ethanol by fermentation, said method comprising a secondary liquefaction step in the presence of a thermostable acid alpha-amylase or, a thermostable maltogenic acid alpha-amylase.

At page 1, lines 24-28, Veit et al. disclose:

Thus, the invention relates to a method of producing ethanol from a starch containing material, preferably based on whole grain, said method comprising the steps of: (a) liquefaction of a starch containing material in the presence of an alpha-amylase; (b) jet cooking; (c) liquefaction in the presence of a thermostable acid alpha-amylase or, or a thermostable maltogenic acid alpha-amylase; and (d) saccharification and fermentation to produce ethanol; wherein the steps (a), (b), (c) and (d) is performed in the order (a), (b), (c), (d).

Significantly, Veit et al. do not disclose the use of an alpha-amylase and a maltogenic alpha-amylase to liquefy a starch-containing material.

Applicants respectfully request that if the Office maintains this rejection, that the Office identify the page and line numbers of Veit et al. which the Office alleges to disclose the use of both an alpha-amylase and a maltogenic alpha-amylase in liquefaction.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 102. Applicants respectfully request reconsideration and withdrawal of the rejection.

III. Conclusion

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

All required fees were charged to Novozymes North America, Inc.'s Deposit Account No. 50-1701 at the time of electronic filing. The USPTO is authorized to charge this Deposit Account should any additional fees be due.

Respectfully submitted,

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